	Document ID	Issue Date	Pages	Title	Current OR
1	US 20050123028 A1	20050609	40	Adaptive margin and band control	375/222
2	US 20050063482 A1	20050324	17	Method for seamlessly changing power modes in an ADSL system	375/260
3	US 20040258142 A1	20041223	26	Fast initialization using seamless rate adaptation	375/220
4	US 20040213362 A1	20041028	26	High speed decoding apparatus and method for analog subscriber connections	375/340
5	US 20040057528 A1	20040325	17	Method for synchronizing seamless rate adaptation	375/260
6	US 20030210739 A1	20031113	26	Fast initialization using seamless rate adaptation	375/219
7	US 20030112887 A1	20030619	54	Method and system for implementing weighted vector error echo cancellers	375/285
8	US 20030112884 A1	20030619	17	Method for seamlessly changing power modes in an ADSL system	375/260
9	US 20030112861 A1	20030619	52	Method and system for adaptively training time domain equalizers	375/232
10	US 20030112860 A1	20030619	54	Method and system for shortening channel impulse response using time domain equalization filter	375/229
11	US 20030081695 A1	20030501	16	Computationally efficient system and method for channel estimation	375/316
12	US 20030076904 A1	20030424	19	Systems and methods for improving FFT signal-to-noise ratio by identifying stage without bit growth	375/340

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1		Cioffi, John M. et al.
2		Tzannes, Marcos
3	375/222	Tzannes, Marcos C.
4		Townshend, Brent
5		Tzannes, Marcos
6	375/222	Tzannes, Marcos C.
7	375/232	Sang, Tzu Hsien et al.
8	375/219	Tzannes, Marcos
9	375/348; 375/350	Erdogan, Alper Tunga et al.
10		Erdogan, Alper Tunga
11		Eilts, Henry Stephen et al.
12		Magee, David Patrick

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13	US 20030026332 A1	20030206	14	Multi-tone transmission	375/222
14	US 20030026331 A1	20030206	12	Multi-tone transmission	375/222
15	US 20020181609 A1	20021205	18	Seamless rate adaptive multicarrier modulation system and protocols	375/295
16	US 20020137467 A1	20020926	36	Fast initialization using seamless rate adaptation	455/69
17	US 20020136285 A1	20020926	27	High speed encoding and decoding apparatus and method for analog subscriber connections	375/222
18	US 20020032004 A1	20020314	42	Simultaneous two-way transmission of information signals in the same frequency band	455/22
19	US 20010031017 A1	20011018	21	Discrete multitone interleaver	375/265
20	US 20010031011 A1	20011018	12	Tone ordered discrete multitone interleaver	375/259
21	US 6891810 B2	20050510	23	Wireless access system and associated method using multiple modulation formats in TDD frames according to subscriber service type	370/294
22	US 6697436 B1	20040224	94	Transmission antenna array system with predistortion	375/296
23	US 6690749 B2	20040210	26	High speed encoding and decoding apparatus and method for analog subscriber connections	375/340

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13	370/210; 375/259; 708/403; 714/786	Taunton, Mark
14	375/260	Taunton, Mark
15		Tzannes, Marcos C.
16	370/232	Tzannes, Marcos C.
17	375/242	Townshend, Brent
18	455/14	Widrow, Bernard
19	375/298	Betts, William L.
20	375/295; 375/341	Betts, William L.
21	370/333; 370/336; 375/261; 375/279; 714/758	Struhsaker; Paul F. et al.
22	330/106; 330/107; 375/297; 455/108; 455/126	Wright; Andrew S. et al.
23		Townshend; Brent

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24	US 6658024 B1	20031202	29	Data transmission device and data transmission method capable of minimizing delay of fast data both in normal conditions and noisy conditions	370/468
25	US 6654410 B2	20031125	35	Fast initialization using seamless rate adaptation	375/222
26	US 6587514 B1	20030701	95	Digital predistortion methods for wideband amplifiers	375/296
27	US 6570912 B1	20030527	13	Hybrid software/hardware discrete multi-tone transceiver	375/222
28	US 6567473 B1	20030520	54	Method for seamlessly changing power modes in a ADSL system	375/260
29	US 6498808 B1	20021224	27	Seamless rate adaptive multicarrier modulation system and protocols	375/225
30	US 6480532 B1	20021112	16	Echo cancellation for an ADSL modem	375/222
31	US 6452987 B1	20020917	21	Fast start-up in discrete multi-tone (DMT) based communications system	375/345
32	US 6408022 B1	20020618	19	Equalizer for use in multi-carrier modulation systems	375/230

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24	370/329; 370/358; 370/412; 370/441; 370/474; 370/493; 375/220; 375/222; 375/285; 375/296; 375/377	Okamura; Yusaku
25	375/260	Tzannes; Marcos C.
26	330/149; 455/126	Wright; Andrew S. et al.
27	375/219; 375/220	Mirfakhraei; Khashayar
28	375/222	Tzannes; Marcos
29	375/222; 375/240.2	Tzannes; Marcos
30	375/217; 375/220; 375/221; 375/288; 375/296; 375/328; 375/343; 375/349; 375/350; 375/351	Vareljian; Albert
31	375/229	Larsson; Patrik et al.
32	375/229; 375/231; 375/350; 708/300	Fertner; Antoni

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33	US 6320901 B1	20011120	16	Method for fast off-line training for discrete multitone transmissions	375/222
34	US 6301312 B1	20011009	22	Bandpass phase tracker with hilbert transformation before analog-to-digital conversion	375/326
35	US 6292515 B1	20010918	24	Dual mode bit and gain loading circuit and process	375/260
36	US 6233284 B1	20010515	32	High speed communications system for analog subscriber connections	375/242
37	US 6233275 B1	20010515	36	High speed communications system for analog subscriber connections	375/231
38	US 6222888 B1	20010424	23	Method and circuit for controlling setup of multichannel system	375/260
39	US 6185251 B1	20010206	18	Equalizer for use in multi-carrier modulation systems	375/231
40	US 6128348 A	20001003	25	Method for configuring data and energy parameters in a multi-channel communications system	375/260
41	US 6094459 A	20000725	26	Circuit for configuring data and energy parameters in a multi-channel communications system	375/295
42	US 6084917 A	20000704	25	Circuit for configuring and dynamically adapting data and energy parameters in a multi-channel communications system	375/260
43	US 6084906 A	20000704	24	ADSL transceiver implemented with associated bit and energy loading integrated circuit	375/220
44	US 6075821 A	20000613	25	Method of configuring and dynamically adapting data and energy parameters in a multi-channel communications system	375/260
45	US 6026286 A	20000215	23	RF amplifier, RF mixer and RF receiver	455/327

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33	370/503; 375/231; 375/354; 708/305	Arad; Oren et al.
34	348/726; 375/316; 375/321	Limberg; Allen LeRoy
35	370/231; 370/468; 375/225; 375/240	Kao; Chiihsin et al.
36	375/254; 375/285	Townshend; Brent
37	375/242	Townshend; Brent
38	375/222; 375/225	Kao; Chiihsin et al.
39	375/229; 708/300	Fertner; Antoni
40	370/235; 375/222; 375/295	Kao; Chiihsin et al.
41	375/222; 375/225	Kao; Chiihsin et al.
42	375/219; 375/222; 375/225	Kao; Chiihsin et al.
43	375/222; 375/225; 375/260	Kao; Chiihsin et al.
44	375/222; 375/225; 375/295	Kao; Chiihsin et al.
45	455/319; 455/333; 455/341	Long; John R.

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46	US 5982820 A	19991109	26	Bandpass phase tracker with hilbert transformation before plural-phase analog-to-digital conversion	375/326
47	US 5970103 A	19991019	25	High speed communications system for analog subscriber connections	375/340
48	US 5859872 A	19990112	27	High speed communications system for analog subscriber connections	375/242
49	US 5835538 A	19981110	28	High speed communications system for analog subscriber connections	375/295
50	US 5832022 A	19981103	40	Method and apparatus for controlling the modulation index of continuous phase modulated (CPM) signals	375/142
51	US 5809075 A	19980915	37	High speed communications system for analog subscriber connections	375/254
52	US 5801695 A	19980901	29	High speed communications system for analog subscriber connections	375/340
53	US 5394473 A	19950228	71	Adaptive-block-length, adaptive-transforn, and adaptive-window transform coder, decoder, and encoder/decoder for high-quality audio	704/200.1
54	US 5353306 A	19941004	8	Tap-weight controller for adaptive matched filter receiver	375/233
55	US 5230011 A	19930720	15	Receiver	375/344
56	US 5109417 A	19920428	50	Low bit rate transform coder, decoder, and encoder/decoder for high-quality audio	704/205
57	US 4796280 A	19890103	14	Digital data separator	375/360

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46	375/316; 375/321	Limberg; Allen LeRoy
47	375/222	Townshend; Brent
48	370/523; 375/285	Townshend; Brent
49	375/242; 375/319	Townshend; Brent
50	332/106; 375/143; 375/297; 375/305; 455/44	Scott; Logan
51	375/222	Townshend; Brent
52	375/231; 375/242	Townshend; Brent
53	375/240; 704/203; 704/206; 704/258; 704/501	Davidson; Grant A.
54	708/319	Yamamoto; Takeshi
55	455/324	Gielis; Gerardus C. M. et al.
56	375/240; 704/203; 704/224; 704/229; 704/500; 708/205; 708/495	Fielder; Louis D. et al.
57	375/371	Nesin; Richard et al.